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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,669	03/02/2006	Allan Lammers	6616-72621-05	3140
57622 7590 10/18/2007 KLARQUIST SPARKMAN, LLP 121 S.W. SALMON STREET SUITE 1600 PORTLAND, OR 97204			EXAMINER IBRAHIM, MEDINA AHMED	
			ART UNIT 1638	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,669	Applicant(s) LAMMERS ET AL.	
	Examiner Medina A. Ibrahim	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group II in the reply filed on 08/14/07 is acknowledged. The requirement is made FINAL.

Claims 11-13 are pending and are examined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Shah et al (The Plant J. (2001), March, vol. 25(5): 563-574; Applicant's IDS).

The claim is drawn to a method of generating a plant having an increased pathogen resistance phenotype comprising identifying a plant that has an allele in its PPR1 gene that results in increased pathogen resistance compared to plants lacking the allele and generation progeny of said identified plant, wherein the generated progeny inherit the allele and have the increased pathogen resistance phenotype; said method employs TILLING methodology.

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Shah et al teach identification of Arabidopsis mutants comprising *npr1* allele and having a mutation in the *SSI2* gene that confers constitutive PR gene expression and spontaneous development of HR-like lesions in the *npr1-5* plants. The *ssi2-1* mutant was isolated by screening 3- to 4-week-old M2 progeny of EMS-mutagenized *npr1-5* plants for mutants that constitutively accumulated transcripts of the *PR-1*, *BGL2* and *PR-5* genes. The *ssi2* mutant and *ssi2 npr1-5* double mutant plants constitutively accumulated transcripts of the *PR-1*, *BGL2* and *PR-5* genes, but control plants did not accumulate the transcripts. Table 1 shows *ssi2-1* mutants and *ssi2 npr1-5* mutant plants are more resistant to *peronospora parasitica* infection as compared to wild-type plants. Since mutations in *ssi2* induce *peronospora parasitica* resistance, it is considered as PPR1 gene. Shah et al also teach F1 and F2 progeny plants of the *ssi2-1 npr1-5* double mutant and *ssi2-1* parents comprising the *ssi2* allele. Shah et al also teach genetic analysis of the *ssi2 npr1-5* double mutants, *ssi2* mutants and F1 and F2 plants produced from said mutants. Therefore, Shah et al teach all claim limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah et al (The Plant J. (2001), March, vol. 25(5): 563-574; Applicant's IDS) in view of Albar et al (Theor. Appl Genet (1998) 97:1145-1154).

The claims are drawn to a method of generating a plant having an increased pathogen resistance phenotype comprising identifying a plant that has an allele in its PPR1 gene that results in increased pathogen resistance compared to plants lacking the allele and generation progeny of said identified plant, wherein the generated progeny inherit the allele and have the increased pathogen resistance phenotype; said method employs TILLING methodology, and candidate gene/QTL methodology.

Shah et al teach identification of Arabidopsis mutants comprising npr1 allele and having a mutation in the *SSI2* gene that confers constitutive PR gene expression and having resistance to *Peronospora parasitica* as discussed above.

While Shah et al teach mutations induced using EMS and genetic analysis of plants/progeny for ssi2/npr1-5 allele; Shah et al do not explicitly teach a method that employs QTL/candidate gene methodology. However, candidate gene/QTL methodology was known in the art as evidenced by Albar et al. Albar et al teach QTLs identification and relationship between resistance and plant morphology and the importance of QTL analysis.

Therefore, it would have been obvious to one of ordinary skill in the art to use the method of identifying and generating a plant having an allele in its PPR1 gene that results in increased *Peronospora parasitica* resistance as taught by Shah et al and to modify that method by incorporating an alternative method of identifying and generating said plant/progeny using the candidate gene/QTL methodology, with a reasonable expectation of success. One would have been motivated to use QTL/candidate gene given the availability of methodology and the availability ssi2 and npr1-5 alleles that confer resistance to *Peronospora parasitica fungal* infections.

Remarks

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McCallum et al (Plant Physiology (2001) 123: 439-442) teach the importance and use of TILLING for plant functional genomics.

No claim is allowed.

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Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571) 272-0797. The Examiner can normally be reached Monday -Thursday from 8:00AM to 5:30PM and every other Friday from 9:00AM to 5:00 PM. Before and after final responses should be directed to fax nos. (703) 872-9306 and (703) 872-9307, respectively.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Mai
10/14/07

MEDINA A. IBRAHIM
PRIMARY EXAMINER

